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 a cooling means mounted on said heatsink to provide a fluid flow between said plurality of pillar-type protrusions in a direction transverse to said heat receiving face.

REMARKS

Applicants and Applicants' representative thank the Examiner for the courtesy extended to Applicants and Applicants' representative during an interview on August 29, 2002. During the interview, Applicants presented several claim amendments to the Examiner for discussion with respect to the prior art applied against the pending claims. Although a complete agreement regarding the allowability of the presented claims was not reached, and the Examiner expressed several concerns with respect to the prior art, it is Applicants understanding that partial agreement was reached with respect to some of the prior art rejections.

It is Applicants understanding that the Examiner agreed that the Elgar et al. (hereafter "Elgar") reference does not disclose to connect the cuts which produce the fins. The Examiner expressed concerns that the Marton reference may disclose to connect the cuts which produce the fins, and that Applicants' claims need to be evaluated with respect to compliance with the election of the species of Figure 3b for prosecution. In this response, Applicants present claim 30 which recites that first and second fluid flow sections are defined by a first and second plurality of pillar-type protrusions respectively, and that the first and second fluid flow sections are connected. The connection of the first and second fluid flow sections are clearly supported by the embodiment of Figure 3b as depicted by the horizontal lines of 7b.

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Also during the interview, the Examiner reviewed claim 1 presented by amendment on August 27, 2002. It is Applicants understanding that the Examiner agreed that the Elgar reference does not disclose an uninterrupted flow path as recited by amended claim 1. However, the Examiner appeared to express concern that the Marton reference could be construed to disclose an uninterrupted flow path as claimed. Applicants asserted that the flow path in Martin is not in a direction in which the cross-sectional width changes, rather it is perpendicular to such direction (into the page showing Fig. 4). Applicants further argued that elements 20 and 12 are arranged to form a conduit to enhance the air flow, thus precluding air flow in a direction in which cross-sectional width changes. No agreement was reached with respect to Marton.

Applicants further discussed claim 15, as amended in the amendment filed on August 27, 2002. It is Applicants' understanding that the Examiner indicated claim 15, as amended, would be allowable over Elgar if limitations were added to associate the cooling means with the airflow direction of claim 1. Applicants have amended claim 15 in this response in a manner which is believed to address the Examiner's suggestion.

Applicants further discussed the election of species with the Examiner. During the discussions, the Examiner indicated that Applicants' election of Figure 2d was accepted and that the requirement to elect between the species of Figure 3, was based on the rationale that the several species of Figure 3 are sub-species which required further election. The Examiner also indicated that it was up to the Applicant to identify which claims are generic to the several species. Applicants indicated during the interview that at least claim 1 was generic the species of Figures 2D and 2E, and to the sub-species of Figures 3A and 3B.

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I. New Claims 30-33

By this supplemental amendment, claim 15 has been amended, and claims 30-33 have been newly added to the application. Amended claim 15 and claims 30-33 are believed to address issues raised in the interview and are believed to be allowable over the art of record. Independent claims 30, 32 and 33 will be discussed in turn below. No new matter has been added by the amendments.

Amended Claim 15

Amended claim 15 has been amended as discussed in the interview to recite that the cooling means provides fluid flow between the pillars in a direction transverse to the heat receiving face of the column. As no prior art of record discloses or suggests an arrangement which uses cooling means to provide a fluid flow transverse to the heat receiving face of a column type heatsink have a plurality of pillar-type protrusions, as recited in claim 15, amended claim 15 is believed to be patentable. Applicants note that both primary references, Elgar and Marton (Fig. 4) place their heatsinks in a duct and thus do not appear to desire mounting the cooling means on the heatsink. Moreover, the fluid flow direction in both Elgar and Marton (Fig. 4) is not desired to be in a direction transverse to the heat receiving face, in fact, the use of these heatsinks in a duct would appear to inhibit fluid flow in a direction transverse to the heat receiving face. Finally, as Lin does not use a column type heat sink and could only be relied upon for proving the mere existence of a fan, and both Elgar and Marton already possess a cooling means (such as a fan), the possible combination of the Lin reference with either Elgar and Marton in an attempt to read on claim 15 would quite clearly be based on impermissible hindsight. Notably, there is no suggestion in any of these references physically alter the

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mounting structure of Elgar, or the duct structure of Marton, or the location of the fan of either Elgar or Marton. Any suggestion for the combination quite clearly would only be gleaned from Applicants' disclosure.

New Claims 30-31

New claim 30 recites a first fluid flow section defined by a first plurality of pillar-type protrusions and a second fluid flow section defined by a second plurality of pillar-type protrusions, the first and second flow sections being connected. This structure is clearly illustrated in Figures 3A and 3B of Applicants' disclosure. As described in the specification, the horizontal lines indicate the fluid flow sections, and the horizontal lines in both Figures 3A and 3B quite clearly extend across the entire width of the heatsink.

As no prior art of record discloses or suggest such a construction, new claim 30 is believed to be allowable. Particularly, Elgar does not disclose to connect the fluid flow sections since it has a solid piece of the column between the different sides of the column holding the fins. Marton also does not disclose such construction since Marton discloses that "[t]ube 20 closes the ducts in center." See, col. 3, line 45, emphasis added.

New claim 31 is allowable at least because of its dependency on new claim 30.

New Claim 32

New claim 32 is similar to claim 1 as presented in the amendment on August 27, 2002, however, new claim 32 further recites that the uninterrupted fluid flow path extends along the face of the column from the end of the column to the heat receiving face. New claim 32 is

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believed to be allowable because no prior art of record is believed to disclose or suggest the claimed construction.

To the extent that Elgar's intermediate product, as asserted by the Examiner, can be used against Applicants' claims, such intermediate product would not have a flow path in the direction recited in the claim, and such intermediate product would not have the claimed uninterrupted flow path. Moreover, the flow path in Marton is not in the direction of the claimed flow path, and Marton also quite clearly does not disclose the claimed uninterrupted flow path.

New Claim 33

New claim 33 recites a cooling means mounted on said heatsink to provide a fluid flow between said plurality of pillar-type protrusions in a direction transverse to said heat receiving face, which limitation is also recited in claim 15. The structure recited in new claim 33 is not believed to be disclosed or suggested by any prior art of record, and thus, is believed to be allowable. Particularly, although new claim 33 is broader than claim 15 since new claim 33 does not recite structural element recited in claim 15, the discussion with respect to amended claim 15 is also applicable to new claim 33.

II. CONCLUSION

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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